

NOAA Climate Science & Services

Monthly Climate Update



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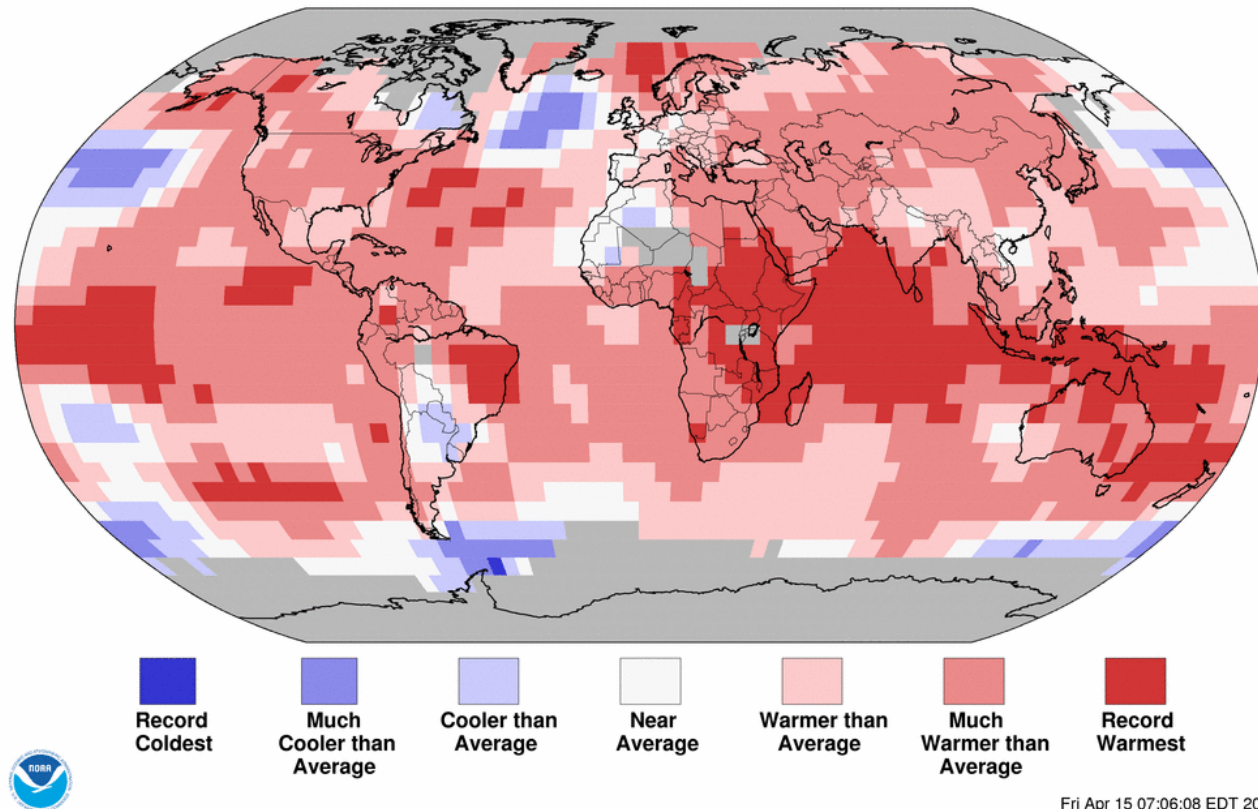
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Chief, Operational Prediction Branch
NOAA's Climate Prediction Center

Global Temperature: March 2016

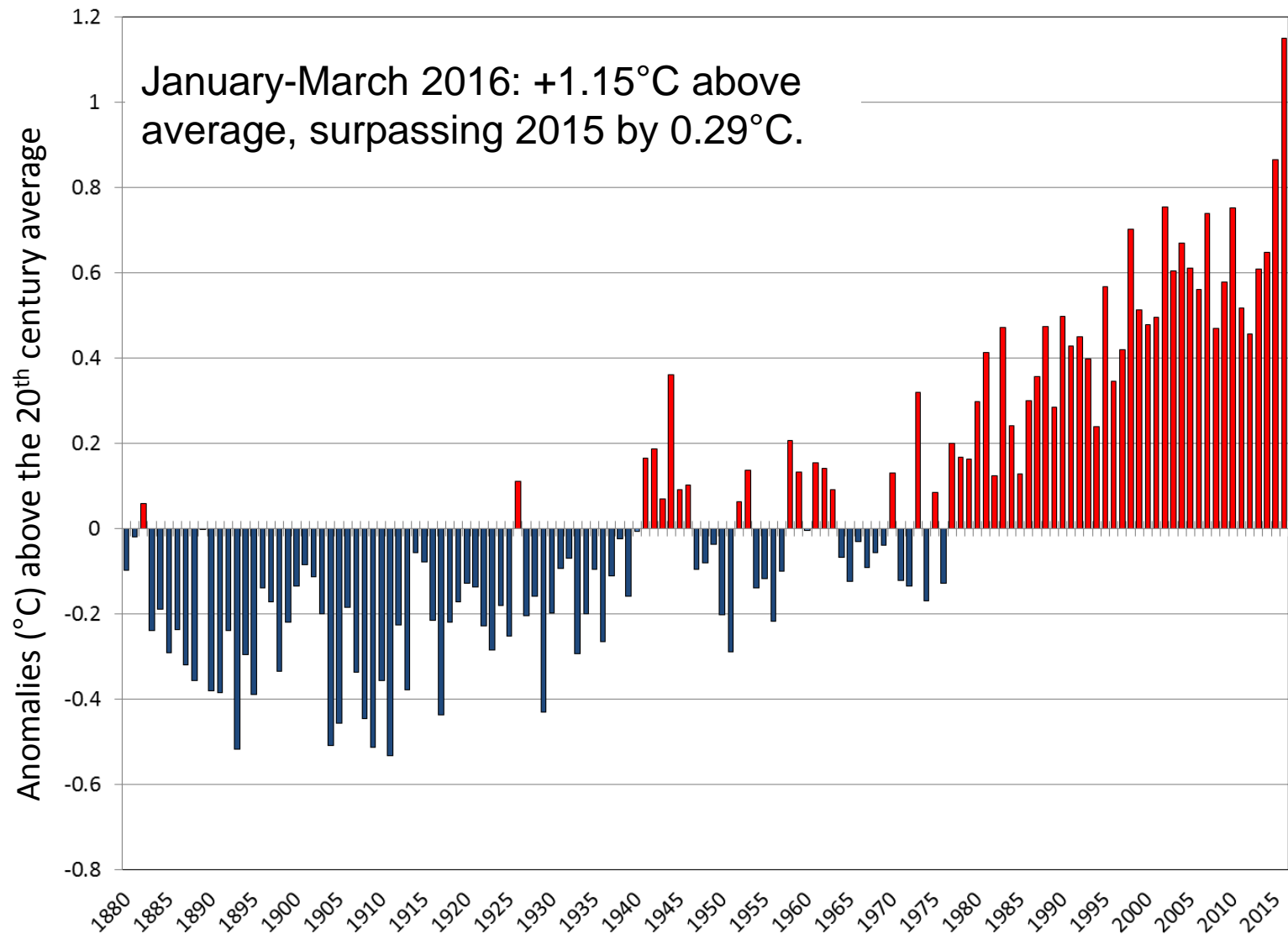
- March $+1.22^{\circ}\text{C}$ above 20th century average
 - Warmest March on record
 - 11th consecutive record warm month
 - Largest monthly departure from average
- Land: $+2.33^{\circ}\text{C}$
 - Warmest March on record
 - Largest monthly departure from average
- Ocean: $+0.81^{\circ}\text{C}$
 - Warmest March on record

Land and Ocean Temperature Percentiles
March 2016



The global temperature record dates to 1880 (137 years)

Global Temperature: Jan-Mar 2016



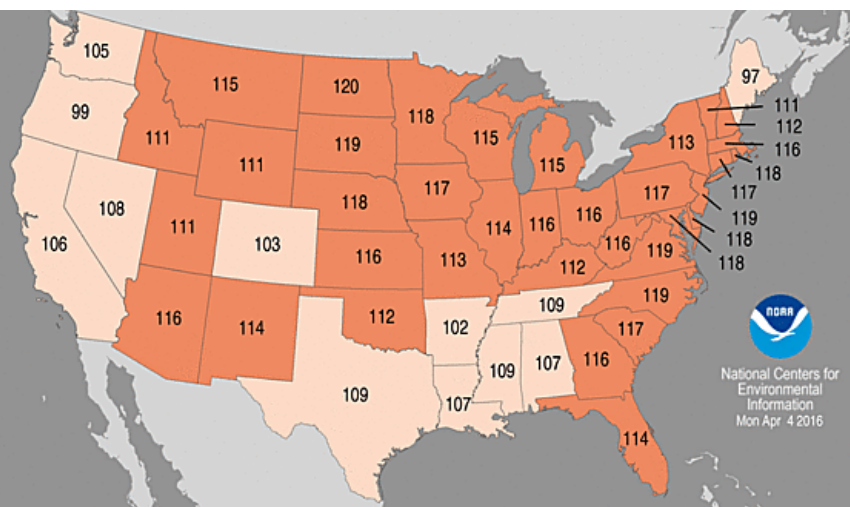
Contiguous U.S. March 2016

Temperature: 47.5°F, +6.0°F, 4th warmest March on record

Precipitation: 2.89", +0.38", 26th wettest March on record

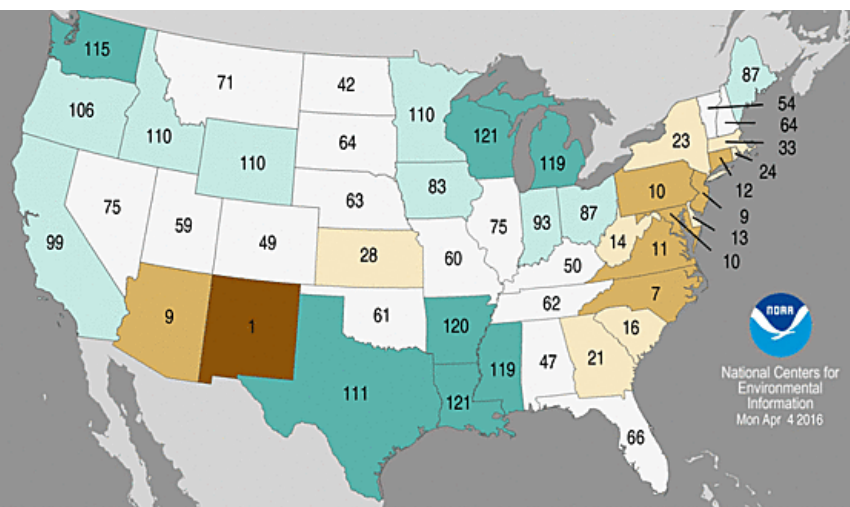
Statewide Temperature Ranks March 2016

Period: 1895-2016 (122 years)



Statewide Precipitation Ranks, March 2016

Period: 1895-2016 (122 years)



- Every state was warmer than average.
- Much-above-average temperatures across the Rockies, Great Plains, Midwest, and East Coast.
- There were 22x more warm daily temperature records than cold daily temperature records

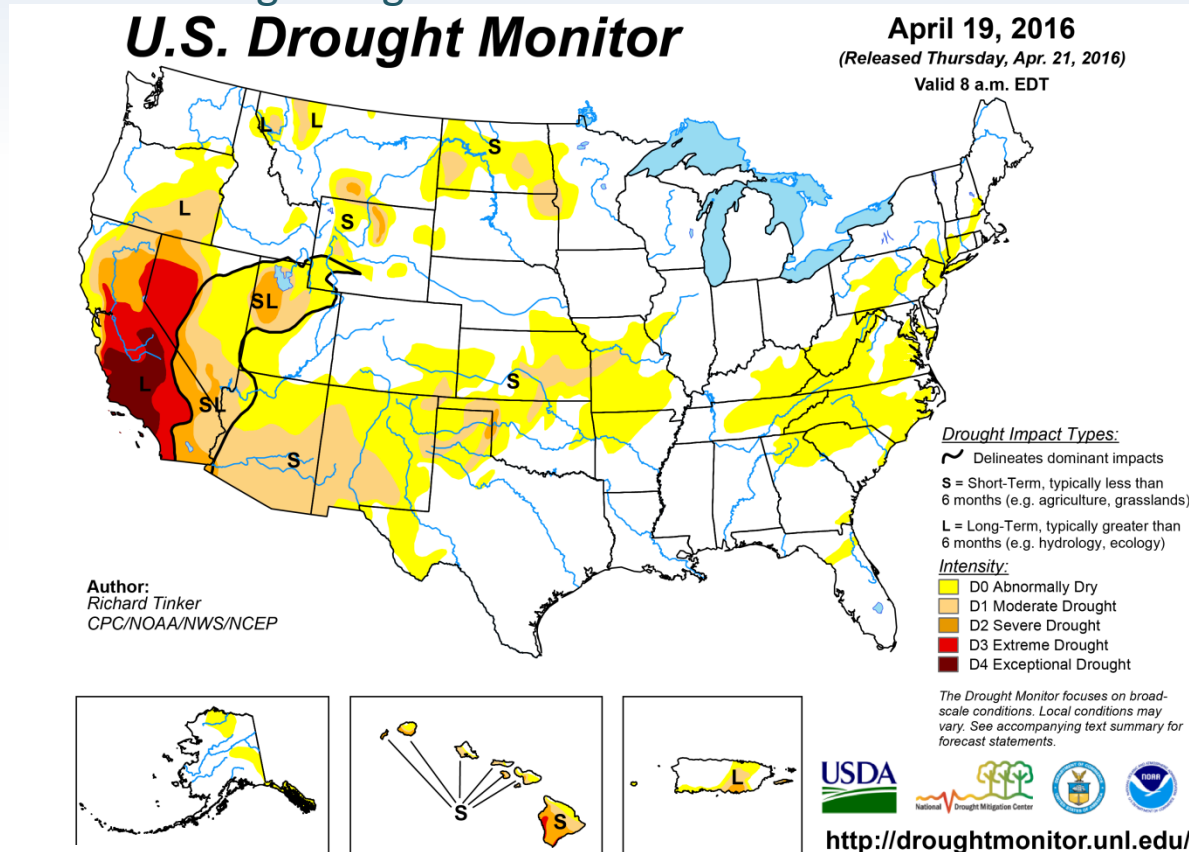
- West Coast, Southern Plains, Lower Mississippi Valley, and Midwest were wetter than average.
 - Record floods in AR, LA, MS, and TN.
- Drier than average along East Coast.
- Southwest was dry, where New Mexico was record dry with only 8% of average precipitation.

Current U.S. Drought

15.4 of Contiguous U.S. in Drought

(↑1.1 percentage points since early March)

- Improvement: Pacific Northwest, Northern California, Southern Plains
- Degradation: Southwest, Central Plains, Northern Plains, Mid-Atlantic
- Outside CONUS: Worsening drought for all of Hawaii

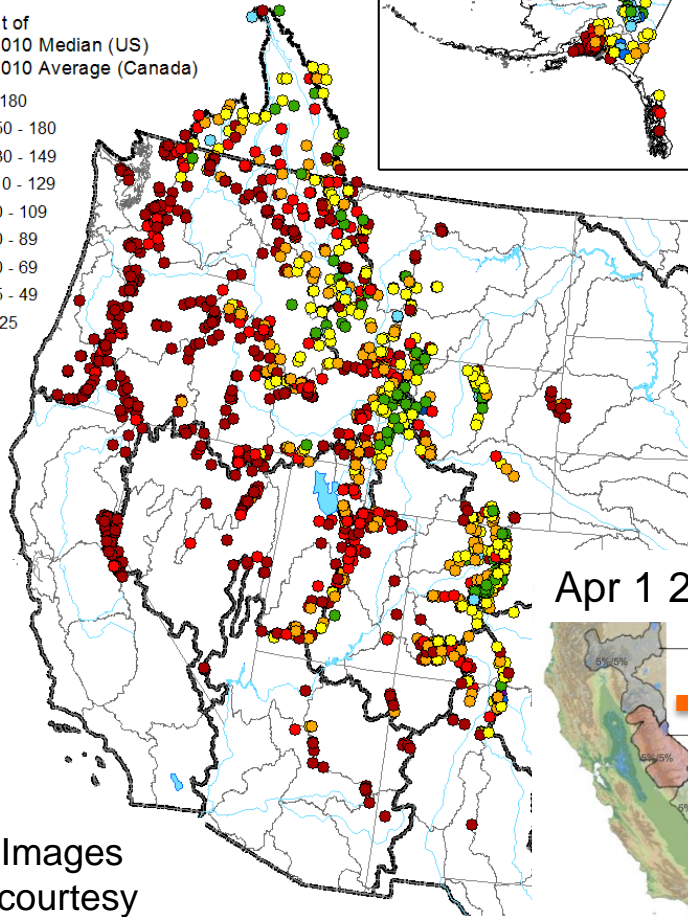
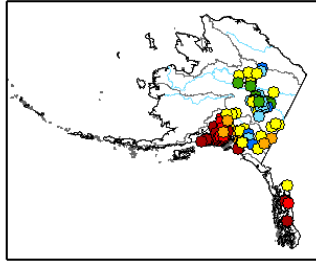


Western U.S. Snowpack

April 1 **2015**
Snowpack

Percent of
1981-2010 Median (US)
1981-2010 Average (Canada)

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

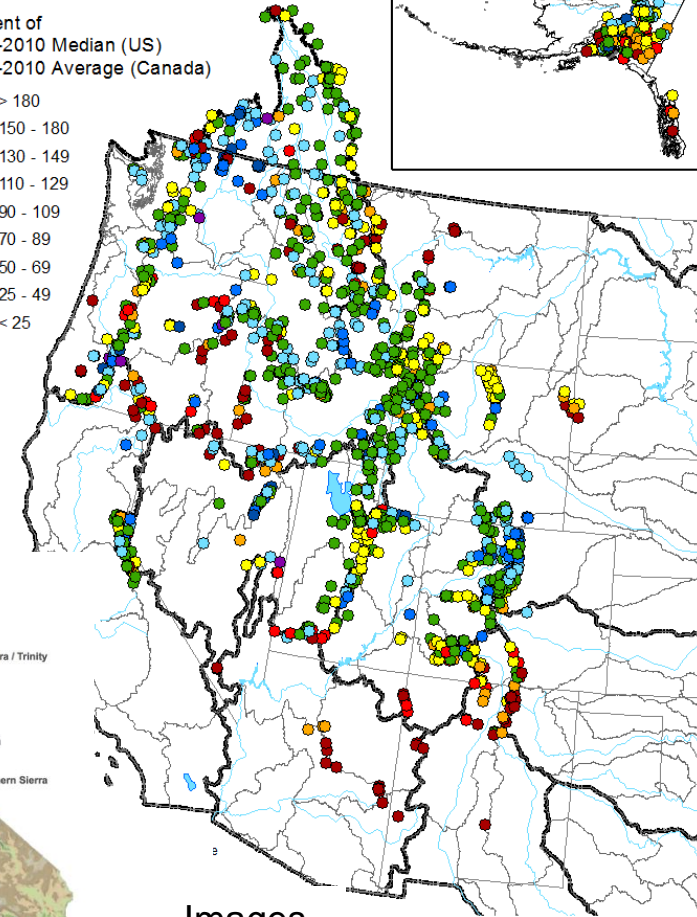
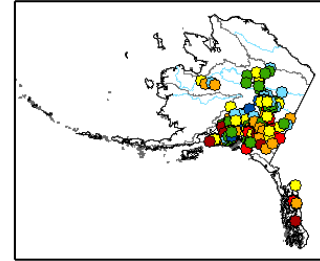


Images
courtesy
USDA NRCS

April 1 **2016**
Snowpack

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- > 180
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- 50 - 69
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Images
courtesy
CA DWR

Apr 1 2015



5% normal SWE

Apr 1 2016



85% normal SWE

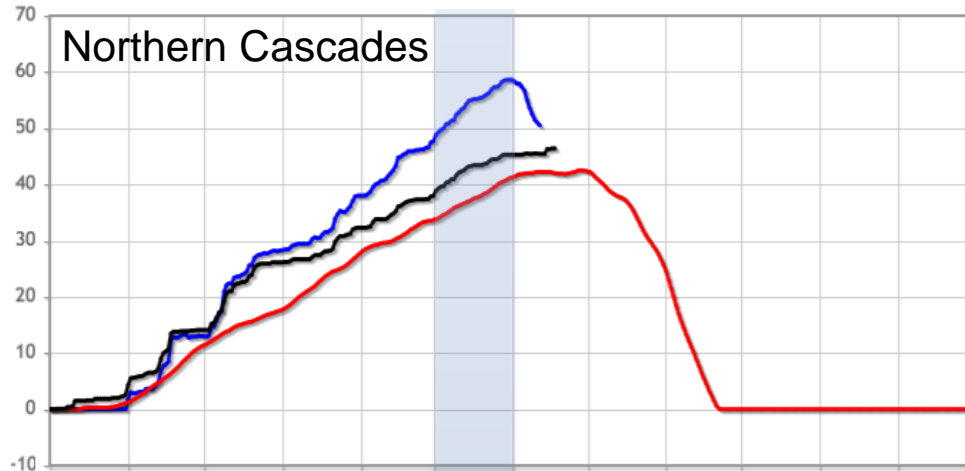


April 2016

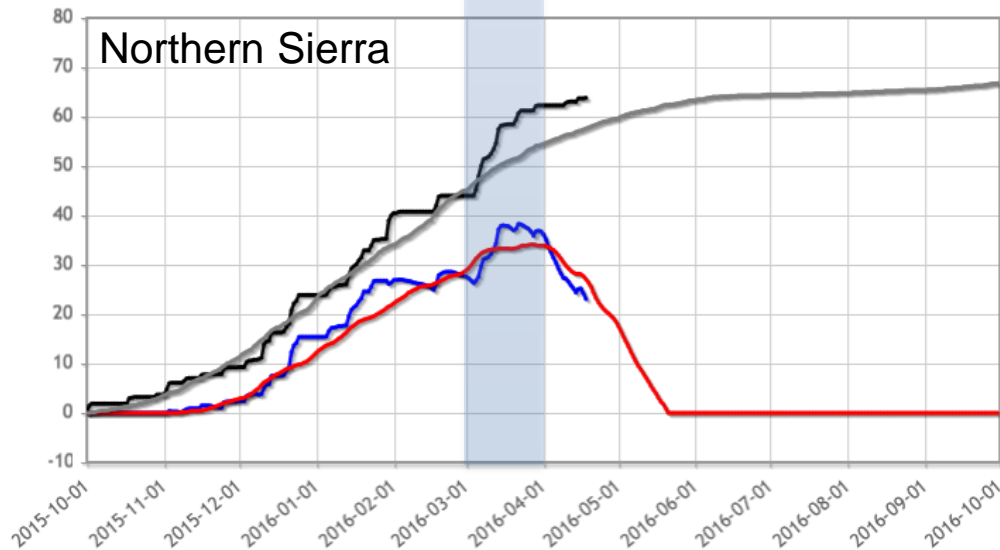
Monthly Climate Webinar

Western U.S. Snowpack

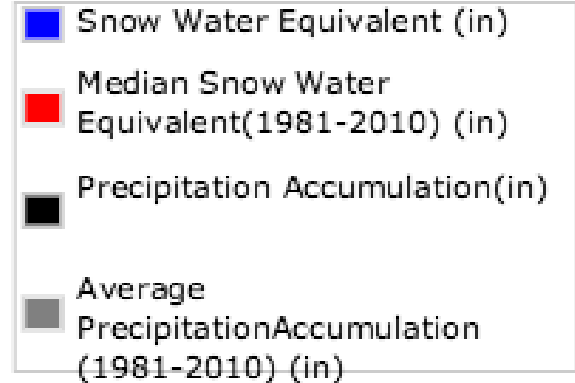
Harts Pass (515) Washington SNOTEL Site - 6490 ft



Css Lab (428) California SNOTEL Site - 6855 ft



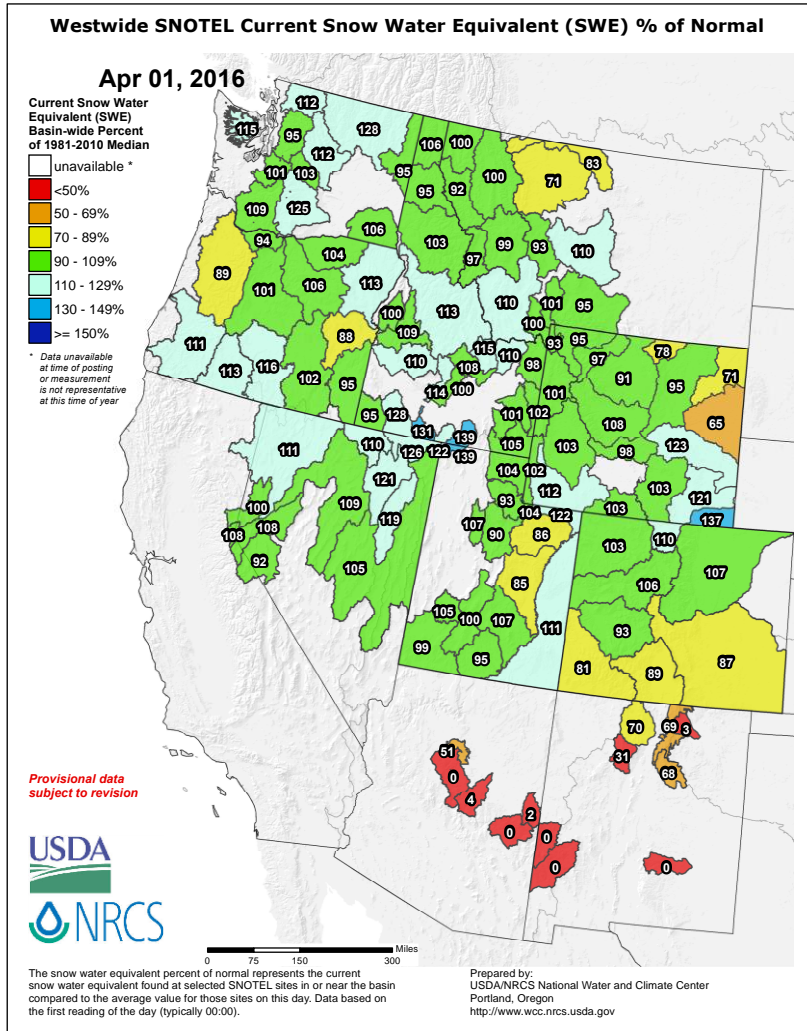
Snowpack peak in March (highlighted), earlier than median. Quick decline in first half of April



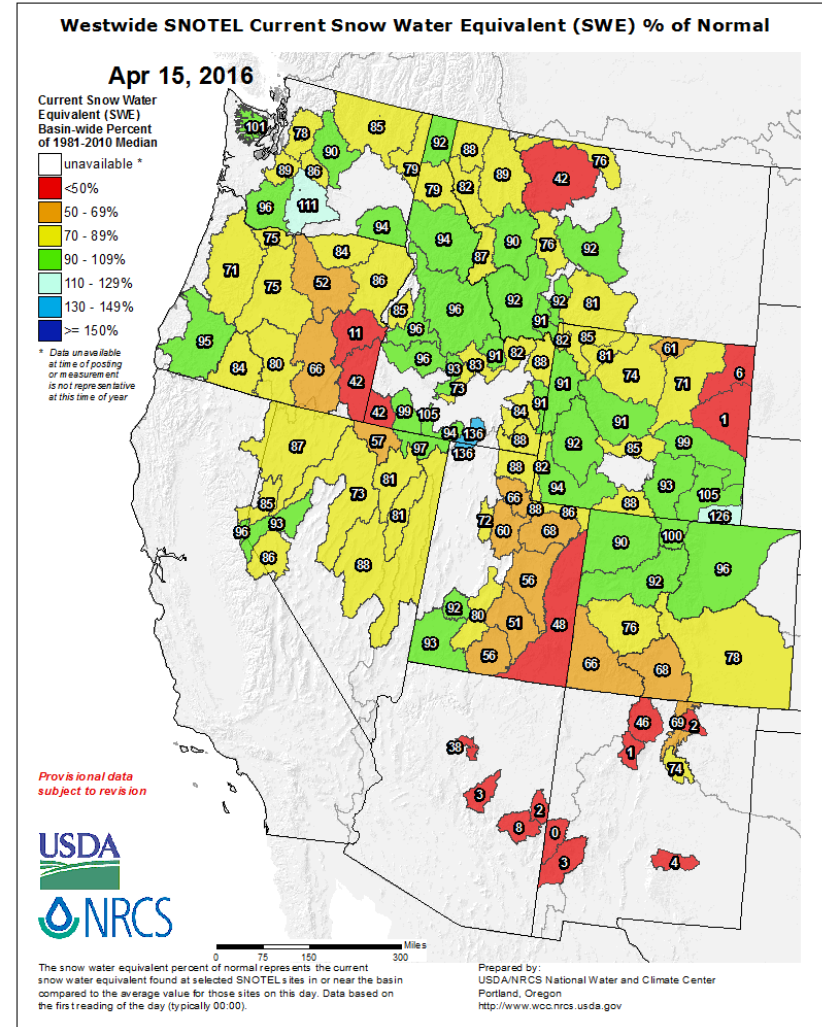
Images courtesy
USDA NRCS

A regional perspective

April 1 2016 - % normal SWE



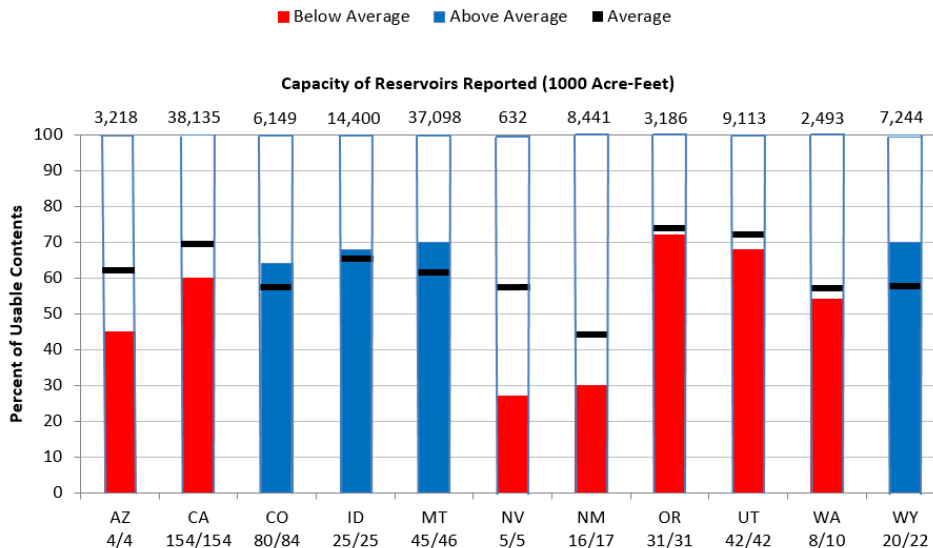
April 15 2016 - % normal SWE



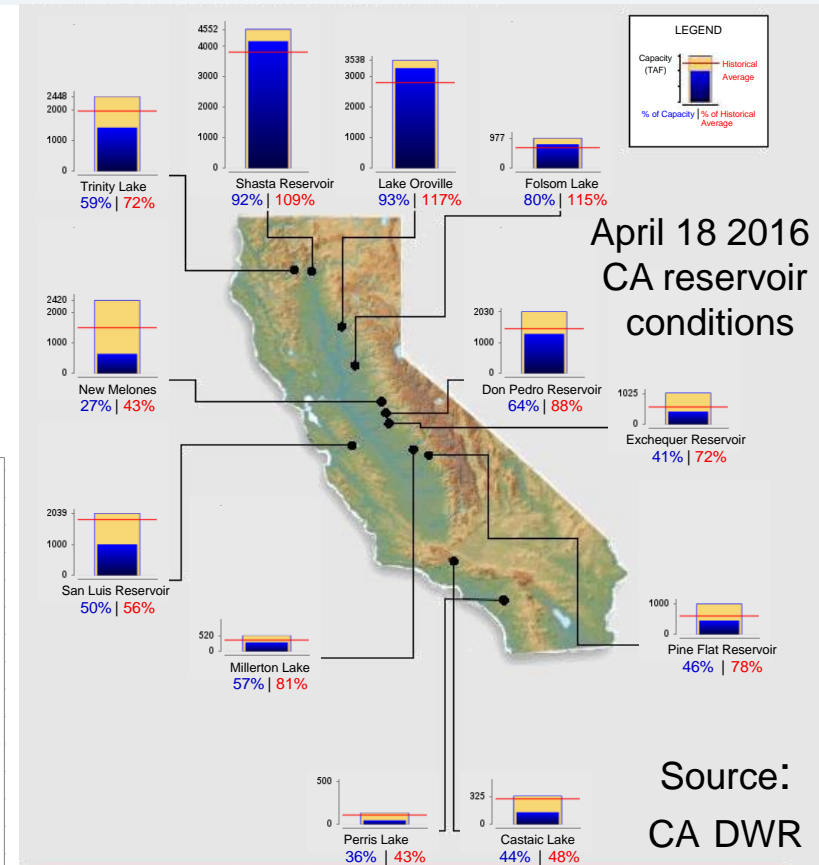
Water Resources

- Large northern CA reservoirs above normal storage
- Many key reservoirs still below normal
- Impacts of multi-year drought still affecting the state

Reservoir Storage as of April 1, 2016



Prepared by: USDA Natural Resources Conservation Service
National Water and Climate Center, Portland, OR
www.ncc.nrcs.usda.gov



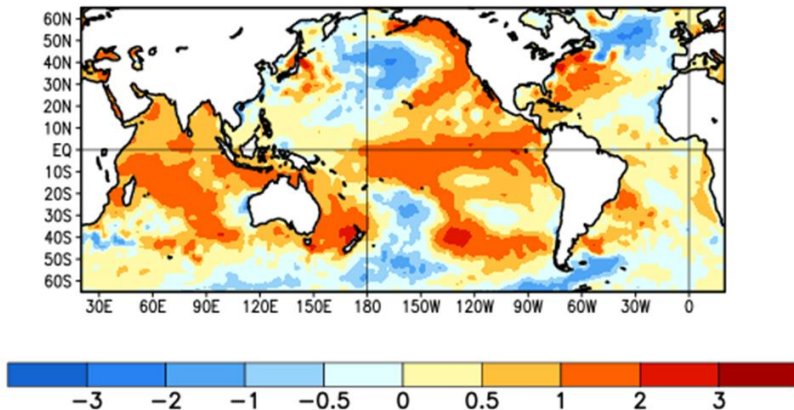
April 18 2016
CA reservoir
conditions

Source:
CA DWR

- OR, WA near normal storage
- CA, NV, NM, AZ below normal—drought conditions introduced/expanded this winter in AZ/NM

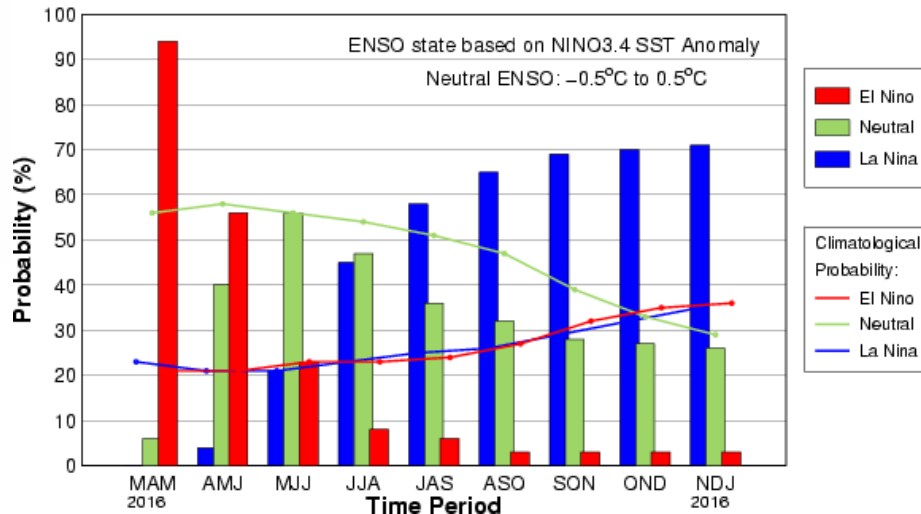
Sea Surface Temperatures and ENSO

Average SST Anomalies
20 MAR 2016 – 16 APR 2016



- Sea surface temperatures
 - Above normal SSTs across the equatorial Pacific
 - Above normal SSTs along the west coast of North America
 - El Nino Advisory remains in place

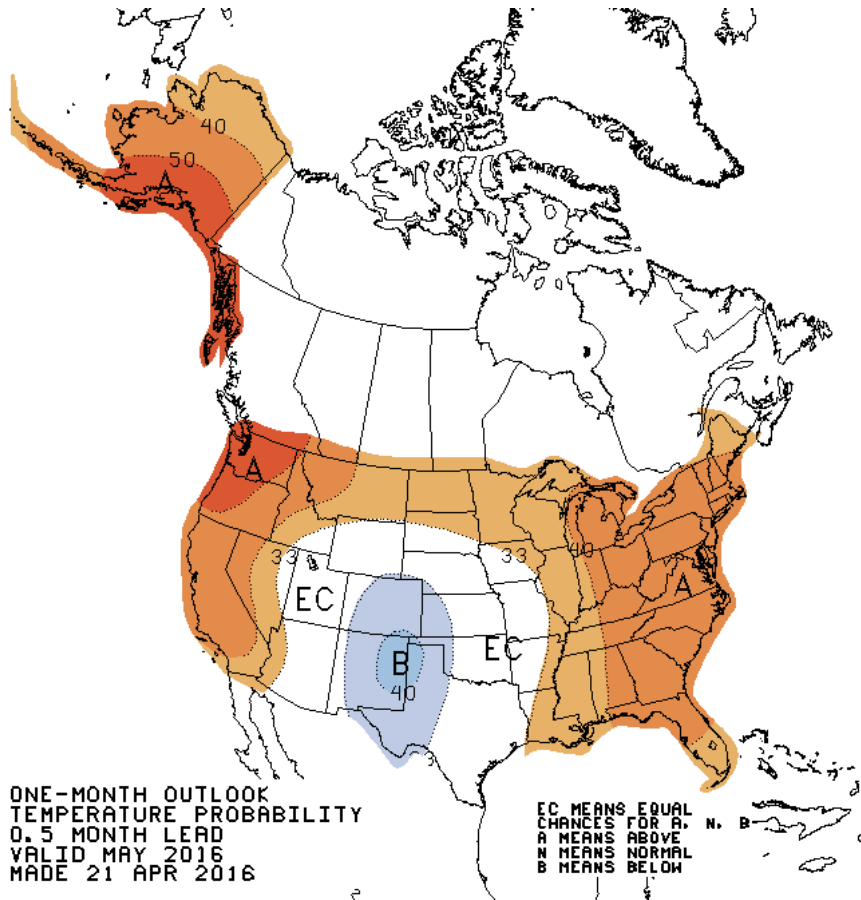
Early-Apr CPC/IRI Official Probabilistic ENSO Forecast



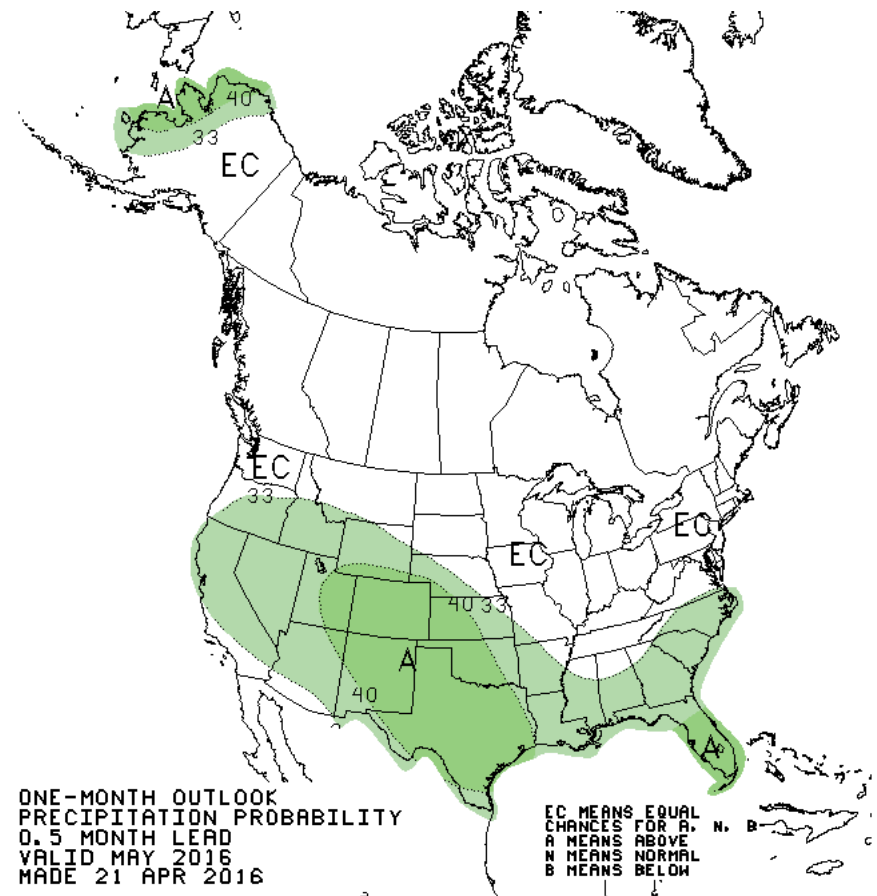
- ENSO forecast
 - El Niño is forecast to continue to weaken
 - A transition to ENSO neutral is likely during spring or early summer 2016
 - La Niña Watch issued

Monthly Forecast (May)

May Average
Temperature Probability

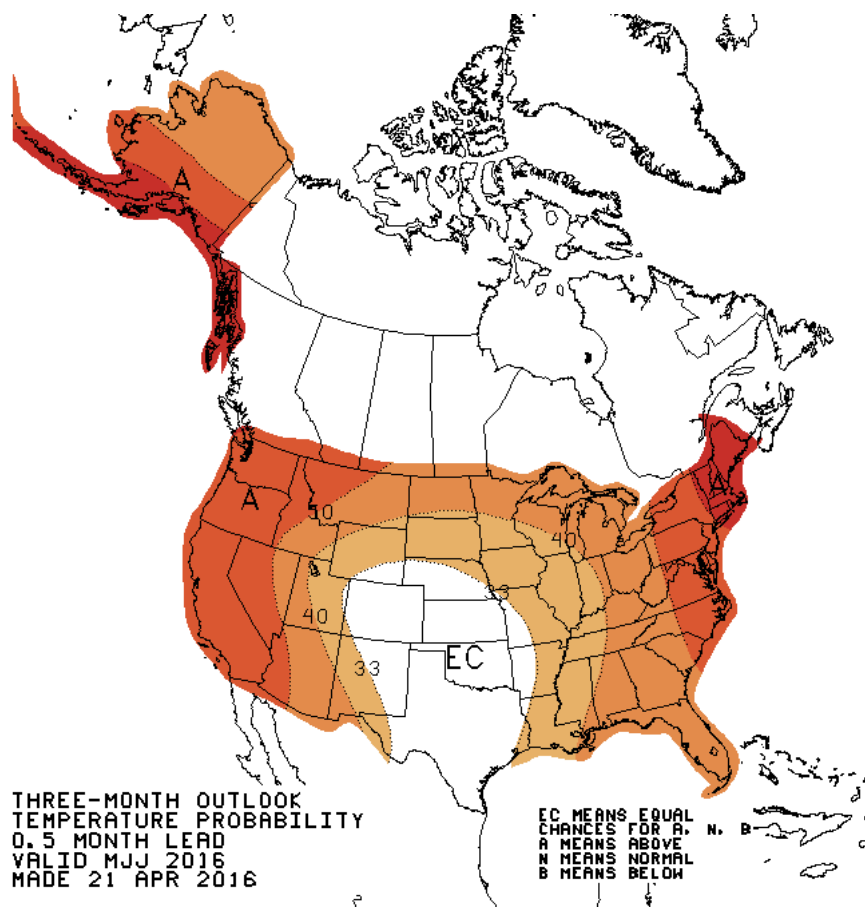


May Total
Precipitation Probability

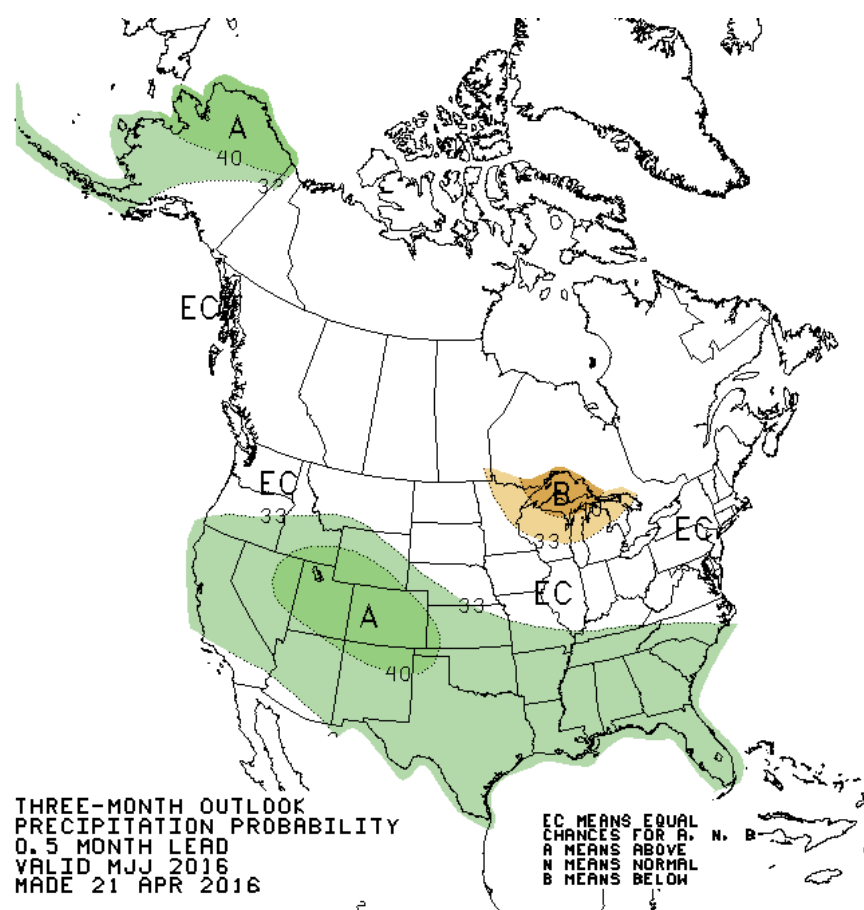


Seasonal Forecast (May–Jun–Jul)

May-Jun-Jul Average
Temperature Probability



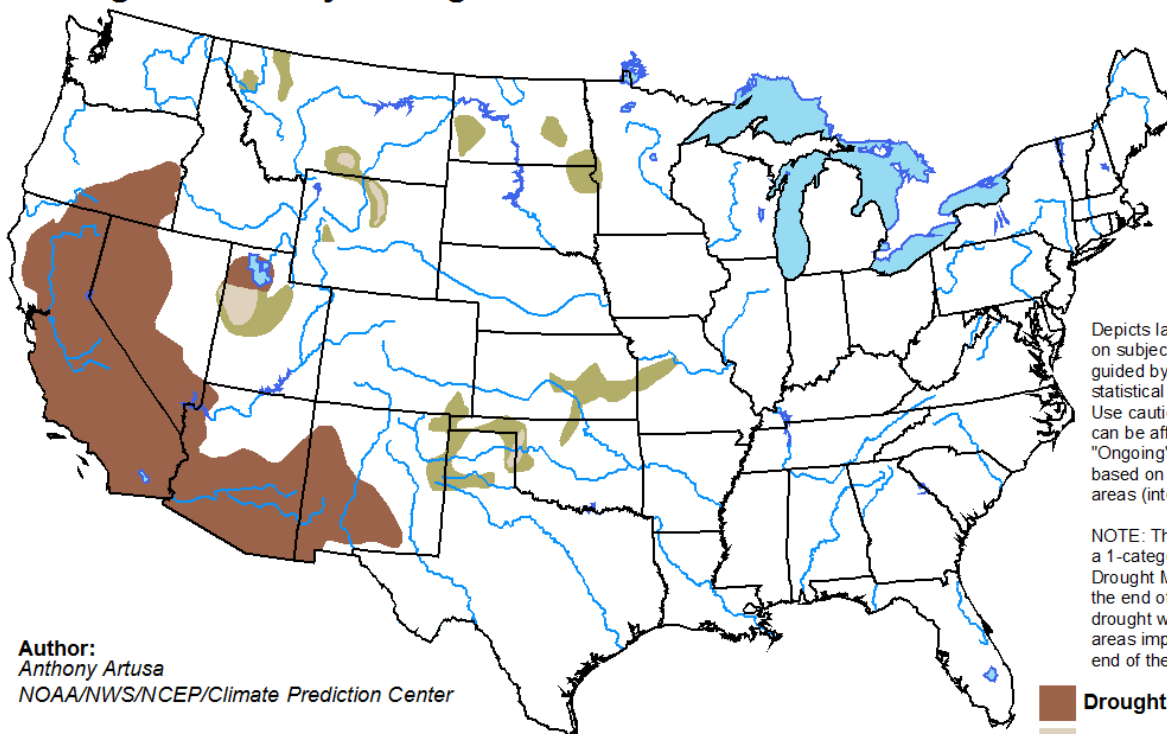
May-Jun-Jul Total
Precipitation Probability



U.S. Drought Outlook

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for April 21 - July 31, 2016
Released April 21, 2016

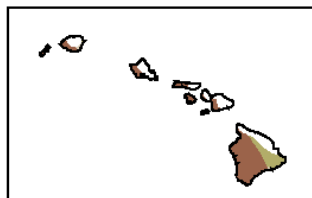
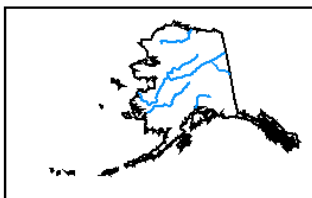


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Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZ73>

For More Information



TODAY'S PRESENTATION:

- <http://www.ncdc.noaa.gov/sotc/briefings>

NOAA's National Centers for Environmental Information:

www.ncdc.noaa.gov

- Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- Dates for upcoming reports: <http://www.ncdc.noaa.gov/monitoring-references/dyk/monthly-releases>

NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov

Western Regional Climate Center: <http://www.wrcc.dri.edu/>

U.S. Drought Monitor: <http://drought.gov>

Climate Portal: www.climate.gov

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